

AMENDMENTS TO THE CLAIMS

1. (Original) A gamma correction device in an image capturing apparatus, the gamma correction device performing gamma correction on a video signal from an image capturing element on the basis of at least one correction curve having a predetermined input-output characteristic, wherein said at least one correction curve has a slope of 5.0 or less at the origin such that a corrected video signal conforms to film properties.

2. (Original) The gamma correction device in the image capturing apparatus according to claim 1, wherein the slope of said at least one correction curve at the origin is settable based on various conditions.

3. (Original) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve comprises a plurality of correction curves having different slopes and being selectable based on various conditions.

4. (Currently Amended) A gamma correction device in an image capturing apparatus, the gamma correction device performing gamma correction on a video signal from an image capturing element on the basis of at least one correction curve having a predetermined input-output characteristic, wherein said at least one correction curve comprises a composite of a first correction curve segment lying from the origin to a predetermined level of an input signal such that a corrected video signal conforms to a cathode-ray tube monitor and ~~another~~ a second correction curve segment lying above the predetermined level of the input signal such that the corrected video signal conforms to film properties, and both correction curve

segments are continuously combined and have the same slope at the predetermined level of the input signal.

5. (Original) The gamma correction device in the image capturing apparatus according to claim 4, wherein the predetermined level of the input signal is settable based on various conditions.

6. (Original) The gamma correction device in the image capturing apparatus according to claim 4, wherein said at least one correction curve comprises a plurality of correction curves having different predetermined levels of the input signals and being selectable based on various conditions.

7. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein the image capturing apparatus is a video camera.

8. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve has a slope of between 1.0 and 5.0 at the origin, indicates an output level less than 100% when the input level is less than 200%, and indicates an output level of at least 100% when the input level is greater than 400%.

9. (New) The gamma correction device in the image capturing apparatus according to claim 8, wherein said at least one correction curve is of differentiability class C^1 on the domain $[0, 200\%]$.

10. (New) The gamma correction device in the image capturing apparatus according to claim 9, wherein said at least one correction curve is an analytic function on the domain [0, 200%].

11. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve has a slope of between 1.0 and 5.0 at the origin, indicates an output level less than 100% when the input level is less than 300%, and indicates an output level of at least 100% when the input level is greater than 350%.

12. (New) The gamma correction device in the image capturing apparatus according to claim 11, wherein said at least one correction curve is of differentiability class C^1 on the domain [0,300%].

13. (New) The gamma correction device in the image capturing apparatus according to claim 12, wherein said at least one correction curve is an analytic function on the domain [0,300%].

14. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve has similar characteristics to curves (i), (ii), and (iii) shown in Fig. 3.

15. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve is of the form

$$Signal_{OUT} = a * \log_{10}(Signal_{IN} + b) + c$$

16. (New) The gamma correction device in the image capturing apparatus according to claim 15, where (a) is between 0.5 and 0.7, (b) is between 0.01 and 0.1, and (c) is between 0.6 and 0.8.

17. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve indicates less compression in the lower levels of the input signal than would a correction curve of the form

$$Signal_{OUT} = a * (Signal_{IN})^r$$

having similar performance in the higher levels of the input signal.

18. (New) The gamma correction device in the image capturing apparatus according to claim 17, wherein said at least one correction curve is of differentiability class C^1 on the domain of input signal levels.

19. (New) The gamma correction device in the image capturing apparatus according to claim 18, wherein said at least one correction curve is an analytic function on the domain of input signal levels.

20. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve indicates less compression in the higher levels of the input signal than would a correction curve of the form

$$Signal_{OUT} = a * (Signal_{IN})^r$$

having similar performance in the lower levels of the input signal.

21. (New) The gamma correction device in the image capturing apparatus according to claim 20, wherein said at least one correction curve is of differentiability class C^1 on the domain of input signal levels.

22. (New) The gamma correction device in the image capturing apparatus according to claim 21, wherein said at least one correction curve is an analytic function on the domain of input signal levels.

23. (New) The gamma correction device in the image capturing apparatus according to claim 4, wherein the image capturing apparatus is a video camera.

24. (New) The gamma correction device in the image capturing apparatus according to claim 4, wherein said at least one correction curve has a slope of between 1.0 and 5.0 at the origin, indicates an output level less than 100% when the input level is less than 150%, and indicates an output level of at least 100% when the input level is greater than 350%.

25. (New) The gamma correction device in the image capturing apparatus according to claim 24, wherein said at least one correction curve is of differentiability class C^1 on the domain $[0, 200\%]$.

26. (New) The gamma correction device in the image capturing apparatus according to claim 1, wherein said at least one correction curve has similar characteristics to curves (iv), (v), or (vi) shown in Fig. 4.

27. (New) The gamma correction device in the image capturing apparatus according to claim 4, wherein said first correction curve segment corresponds to the ITU-709 characteristic curve.

28. (New) The gamma correction device in the image capturing apparatus according to claim 4, wherein said second correction curve segment is of the form

$$Signal_{OUT} = a * \log_{10}(Signal_{IN} + b) + c$$

29. (New) The gamma correction device in the image capturing apparatus according to claim 4, wherein said first correction curve segment corresponds to the ITU-709 characteristic curve and said second correction curve segment is of the form

$$Signal_{OUT} = a * \log_{10}(Signal_{IN} + b) + c$$